

In the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application:

1 1. (Currently Amended) A digital image sensor, comprising:
2 a first two-color photo-detector having a first photo-detector element ~~capable~~
3 ~~of designed for~~ absorbing blue light ~~within a first range of wavelengths~~ and a second photo-
4 detector element ~~capable of~~ designed for absorbing complement of blue light ~~within a second~~
5 ~~range of wavelengths~~, said first photo-detector element being in an elevated relation with said
6 second photo-detector element, said first photo-detector element being electrically isolated
7 from said second photo-detector element; and
8 a second two-color photo-detector having a third photo-detector element
9 ~~capable of~~ designed for absorbing complement of red light ~~within a third range of~~
10 ~~wavelengths~~ and a fourth photo-detector element ~~capable of~~ designed for absorbing red light
11 ~~within a fourth range of wavelengths, said first, second, third and fourth range of wavelengths~~
12 ~~each being different from the other~~, said third photo-detector element being in an elevated
13 relation with said fourth photo-detector element, said third photo-detector element being
14 electrically isolated from said fourth photo-detector element.

1 2. (Original) The sensor of Claim 1, further comprising:
2 a substrate, said second photo-detector element being formed within said
3 substrate.

1 3. (Original) The sensor of Claim 2, further comprising:
2 a dielectric layer between said first photo-detector element and said second
3 photo-detector element, said dielectric layer electrically isolating said first photo-detector
4 element from said second photo-detector element.

1 4. (Currently Amended) The sensor of Claim 1, wherein said first photo-detector
2 element is formed of amorphous silicon having a thickness selected to absorb said blue light
3 ~~within said first range of wavelengths~~ and pass said complement of blue light ~~within said~~
4 ~~second range of wavelengths, said second photo-detector detecting light within said second~~
5 ~~range of wavelengths passed by said first photo-detector element.~~

1 5. (Original) The sensor of Claim 1, wherein said first and second photo-
2 detector elements are photodiodes.

1 6. (Original) The sensor of Claim 5, wherein said photodiodes are PIN
2 photodiodes.

1 7. (Currently Amended) The sensor of Claim 1, further comprising:
2 a color filter in an elevated relation with said first photo-detector element, said
3 color filter absorbing light within ~~another~~ a portion of said complement of blue light range of
4 ~~wavelengths~~ and passing the rest of said complement of blue light ~~within said first and~~
5 ~~second ranges of wavelengths.~~

1 8. (Original) The sensor of Claim 7, further comprising:
2 a transparent metal conductor layer between said color filter and said first
3 photo-detector element.

1 9. (Original) The sensor of Claim 1, further comprising:
2 circuitry for driving said first photo-detector element and said second photo-
3 detector element, said first photo-detector element being in an elevated relation with said
4 circuitry.

1 10-12. (Canceled)

1 13. (Currently Amended) The sensor of Claim 12, wherein said first photo-
2 detector element produces a first color value, said second photo-detector element produces a
3 second color value, said third photo-detector element produces a third color value and said
4 fourth photo-detector element produces a fourth color value, and further comprising:
5 a third two-color photo-detector having a fifth photo-detector element in an
6 elevated relation with a sixth photo-detector element, said fifth photo-detector element being
7 electrically isolated from said sixth photo-detector element, said fifth photo-detector element
8 ~~being capable of~~ designed for absorbing said blue light ~~within said first range of wavelengths~~
9 and producing a fifth color value, said sixth photo-detector element ~~being capable of~~ designed
10 for absorbing said complement of blue light ~~within said second range of wavelengths~~ and
11 producing a sixth color value; and
12 a fourth two-color photo-detector having a seventh photo-detector element in
13 an elevated relation with an eighth photo-detector element, said seventh photo-detector
14 element being electrically isolated from said eighth photo-detector element, said seventh

15 photo-detector element ~~being capable of~~ designed for absorbing said complement of red light
16 ~~within said first range of wavelengths~~ and producing a seventh color value, said eighth photo-
17 detector element ~~being capable of~~ designed for absorbing said red light within said second
18 ~~range of wavelengths~~ and producing an eighth color value.

1 14. (Currently Amended) A digital image sensor, comprising:
2 a first two-color photo-detector having a first photo-detector element ~~capable~~
3 ~~of~~ designed for absorbing blue light within a first range of wavelengths and a second photo-
4 detector element ~~capable of~~ designed for absorbing complement of blue light within a second
5 ~~range of wavelengths~~, said first photo-detector element being in an elevated relation with said
6 second photo-detector element;
7 a first dielectric layer between said first photo-detector element and said
8 second photo-detector element;
9 a second two-color photo-detector having a third photo-detector element
10 ~~capable of~~ designed for absorbing complement of red light within a third range of
11 wavelengths and a fourth photo-detector element ~~capable of~~ designed for absorbing red light
12 within a fourth range of wavelengths, said first, second, third and fourth range of wavelengths
13 ~~each being different from the other~~, said third photo-detector element being in an elevated
14 relation with said fourth photo-detector element; and
15 a second dielectric layer between said third photo-detector element and said
16 fourth photo-detector element.

1 15. (Original) The sensor of Claim 14, further comprising:

2 a substrate, said second photo-detector element being formed within said substrate.

1 16. (Currently Amended) The sensor of Claim 14, wherein said first photo-
2 detector element is formed of amorphous silicon having a thickness selected to absorb said
3 blue light within said first range of wavelengths and pass said complement of blue light, said
4 ~~second photo-detector detecting light within said second range of wavelengths passed by said~~
5 ~~first photo-detector element.~~

1 17. (Currently Amended) The sensor of Claim 14, further comprising:
2 a color filter in an elevated relation with said first photo-detector element, ,
3 said color filter absorbing light within ~~another~~ a portion of said complement of blue light
4 ~~range of wavelengths~~ and passing the rest of said complement of blue light within said first
5 ~~and second ranges of wavelengths.~~

1 18. (Original) The sensor of Claim 17, further comprising:
2 a transparent metal conductor layer between said color filter and said first
3 photo-detector element.

1 19. (Original) The sensor of Claim 14, further comprising:
2 circuitry for driving said first photo-detector element and said second photo-
3 detector element, said first photo-detector element being in an elevated relation with said
4 circuitry.

1 20-26. (Canceled).

1 27. (Currently Amended) The sensor of Claim 1, wherein said first photo-detector
2 element is formed of amorphous silicon having a first thickness selected to absorb said blue
3 light ~~within said first range of wavelengths~~ and said third photo-detector element is formed of
4 amorphous silicon having a second thickness selected to absorb said complement of red light
5 ~~within said third range of wavelengths.~~

1 28. (Currently Amended) The sensor of Claim 14, wherein said first photo-
2 detector element is formed of amorphous silicon having a first thickness selected to absorb
3 said blue light ~~within said first range of wavelengths~~ and said third photo-detector element is
4 formed of amorphous silicon having a second thickness selected to absorb said complement
5 of red light ~~within said third range of wavelengths.~~